CC-1 - GHG Registry[1]

On May 8, 2007, Utah joined with thirty states as a charter member of The Climate Registry. Charter members include Arizona, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Illinois, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Utah, Vermont, Washington, Wisconsin, Wyoming and the Campo Kumeyaay Nation. Two Canadian provinces, British Columbia and Manitoba, have also committed to participate.

A GHG registry provides a platform for mandatory or voluntary reporting. It helps ensures consistent data reporting and accounting methodologies. Companies, governments, and others are encouraged measure emissions. Incentives may be created for those who reduce emissions. Strategies may be developed to manage potential liabilities. A "common currency" for GHG emissions is essential in laying the foundation for carbon markets.

This is a voluntary program for Utah and provides businesses with the opportunity to get credit for early reductions of greenhouse gases. The Registry will begin to accept reporting data in January 2008.

Benefit/Cost of reducing CO_2e:
Registries do not directly result in emissions reductions.

Assessment: High Priority. Bin:

A registry is a prerequisite for any GHG goals or targets. It also prepares Utah for federal regulatory action and benefits early adopters of GHG reductions. It is important to begin measuring GHG emissions.

A voluntary registry will be relatively easy to roll out and can build momentum for the support of a mandatory program.[2] A mandatory program will likely require state legislation. A mandatory program could be phased in to allow companies to develop the expertise. The DOE program could serve as an example for a mandatory program.[3]

There will be some expense, but less than for other reporting/monitoring requirements. CO2 is easier to report than other emissions. It does not require continuous emissions monitoring but, rather, to track their fuel use.

[since the governor has already adopted this proposal, there is nothing to propose here, unless we want to recommend an option such as mandatory reporting or participation in a registry by major sources, government agencies, etc.]

[1] This includes option CC-3, 15, and 22.
[2] See California's program: www.climateregistry.org
[3] http://www.eia.doe.gov/oiaf/1605/frntvrgg.html

CC-2 - GHG Reduction Target

Western states with GHG emissions reduction goals include the following:[4]
Arizona: 2000 levels by 2020; 50 percent below 2000 levels by 2040
California: 2000 levels by 2010; 1990 levels by 2020; 80 percent below 1990 levels by 2050[5]
Oregon: 1990 levels by 2010; 10 percent below by 2020; 75 percent by 2050
New Mexico: 2000 levels by 2012; 10 percent below by 2020; 75 percent below 2050
Washington: 1990 levels by 2020; 70-80 percent below 1990 levels by 2050 [6]
Colorado is considering setting separate targets for state emissions, creating a separate body to oversee climate policy, and requiring local governments to develop GHG reduction plans and targets. Montana is considering statewide GHG reduction targets and separate target for state emissions. At least 7 other states have set GHG targets; they typically call for a 10 percent cut from 1990 levels by 2020 and a 60-80 percent reduction by 2050. The European Union has adopted a 20 percent reduction goal by 2020 (30 percent reduction if China and other large emitters accept a similar goal, and some European nations have set 50-80 percent reduction goals by 2050.[7]

Benefit/cost of reducing CO_2e:
Cost figures apply to specific measures aimed at achieving GHG emission reduction goals.

Assessment: High Priority. Bin:

The Governor should take the lead in establishing short-term and long-term goals. Short term goals are more critical, but both types of goals are needed. Consideration should be given as to whether the goal should be aspirational and voluntary or more of a mandate, as California has done, or a mandate with interim targets. We may want to recommend broad policy options with the expectation that further work and discussion will occur. We may want to recommend broad policy options with the expectation that further work and discussion will occur. California policy of energy imports affects GHG emissions of other sources. Montana has passed legislation with a similar proposal but it is a net exporter of energy. Wyoming, Utah, New Mexico and Montana are net exporters of energy.

---

[4] With the exception of California, long term goals are not yet binding on state governments. Under the Northeast's Regional Greenhouse Gas Initiative (RGGI), governors of seven states have committed to stabilizing emissions at current levels from 2009-15 and then reducing them by 10 percent by 2019. http://www.rggi.org/

[5] 2050 Goal is provided for by Executive Order

[6] Arizona Climate Change Advisory Group, "Climate Change Action Plan," http://www.azclimatechange.us/ewebeditpro/items/O40F9347.pdf., at 7; Green Car Congress, February 14, 2007, www.greencarcongress.com/2007/02/new_jersey_gove.html; www.greencarcongress.com/2007/02/illinois_govern.html. http://seattlepi.nwsource.com/local/299092_warming10.html

[7] Europa Press Release, Jan 10, 2007, "Questions and Answers on the Commission Communication Limiting Global Climate Change to 2°C, http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/17&format=HTML&aged=0&language=EN&guiLanguage=en; http://www.theclimategroup.org/index.php?pid=422; http://www.defra.gov.uk/news/2007/070131b.htm; http://thewatt.com/article1270.html; *Energy Bulletin,* 2005, http://www.energybulletin.net/11759.html; www2.news.gov.bc.ca/news_releases_2005-2009/2007OTP0014-000128.htm.

CC-3 - Public Education and Outreach[8]

Assessment: High Priority. Bin:

Public education and outreach programs could take a variety of forms. Programs should educate the entire public, not just public school students. A combination of state and private funding is needed. Partnerships could be formed with other entities such as utilities and large companies. Because such campaigns can change behavior, it is possible to get a lot of value for the resources invested.

Arizona and New Mexico identify specific audiences to be targeted, including policymakers, youth, community leaders, and the general public. New Mexico also targets industrial and economic sectors. Colorado is considering establishing an education and outreach committee and outreach coordinator position, holding regular briefings to promote implementation, and adding climate to education performance standards for schools. The Oregon Governor's Advisory Council on Global Warming is to develop an education program.

The Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado, Boulder works with the Office of Oceanic and Atmospheric Research of the National Oceanic and Atmospheric Administration to create programs for K-12 school districts, teachers and students, undergraduates, and other community groups. CIRES has established a K-12 Outreach Program that combines science with innovative teaching practices. Other ongoing projects include classroom and prospective teacher professional development, volunteer opportunities for scientists, education components for research projects, district partnerships, research mentors for high school students and undergraduates, and collections of digital resources for geo-science education project evaluation and for climate change education.[9]

Public education and outreach programs are also discussed in other categories.[10]

[8] This includes option CC-7, 16, 23, 24, and 25.
[9] See http://cires.colorado.edu/education/k12/
[10] RCI 14, 27, and 33

CC-4 - Research and Development into Low/no Carbon Energy Strategies[11]

Assessment: High Priority. **Bin:**

This option could include nuclear power. Any research done should build on research being done at Utah universities. The University of Utah has a leading research program in coal technology and clean energy from coals. There is not a lot of research in Utah on renewables.

Colorado is considering promoting climate research and technology development at state universities, and the Oregon state university system was asked to develop strategic and targeted research, development, and demonstration programs for GHG reduction technologies.

California's GHG procurement policy has prompted California-Wyoming research on clean coal technologies.

[11] Research and development options are also addressed in the RCI and energy supply sectors; the focus here would be on GHGs not covered in these other categories.

CC-5 - Climate Adaptation Strategies and Policies

Assessment: High Priority. Bin:

This option could include adaptations to address the consequences of reduced snowpack, increased precipitation, more intense droughts, and drier soils; the spread of new diseases affecting humans and other forms of life; shifts in vegetation patterns and distributions and other impacts on ecosystems and on agriculture; and other possible impacts. Utah should focus in particular on the impacts of climate change on water, drought, and reduced snowpack. It is important to bring agencies together to address this. Utah universities could possibly focus research into this area.

Arizona is developing a comprehensive state adaptation strategy and gives priority to adaptation measures that can also help mitigate GHG emissions.

CC-6 - Regional/State Cap and Trade Program, Carbon Tax, or Hybrid[12]

Cap and Trade. Cap and trade programs typically establish a cap on total emissions or an emissions reduction goal, specify caps for major sources and allocate emissions allowances to those sources, and then require sources to demonstrate each year that their actual emissions do not exceed their allowances. Sources that emit less than their allowances can sell excess allowances to other sources that exceed their allowances. Cap and trade programs face considerable challenges such as how to establish the overall cap, how to allocate allowances to major sources, whether to give away or sell/auction allowances, how to monitor emissions and ensure compliance, and how to certify trades. U.S. EPA's acid rain program established under the 1990 Clean Air Act provides valuable lessons for the design of cap and trade programs.[13] The European Union's Emissions Trading System, established in 2005 to help prepare EU countries for complying with the Kyoto Protocol, is the world's largest such trading program.[14]

In February, 2007, the governors of Washington, Oregon, California, Arizona, and New Mexico agreed to develop within the next six months a regional target for reducing GHGs, and, by August, 2008, the design for a regional, market-based mechanism to achieve the target. Utah joined the Western Climate Initiative in May, and 2 Canadian provinces have also joined as of mid-June.

CO_2 Tax. A carbon tax could be placed on the consumption of carbon in any form. Proposals typically call for a tax based on fuel use or emissions or some other measure, such as the volume of smokestack emissions from power plants or the fossil fuel content of motor vehicle fuel. Carbon taxes are sometimes championed as an alternative to cap-and-trade programs, because they are simpler to design and implement, can be put in place more quickly, are easier to understand and consequently more likely to be accepted, more likely to lead to predictability in energy prices, can address more sectors of the economy, and create a revenue stream that can be used to reduce other taxes or fund energy efficiency and renewables. Critics point to the political difficulties associated with raising taxes, the experience with cap-and-trade programs like acid rain that have been widely viewed as successful, and the advantage of having a cap that, if accurately set, can ensure that environmental protection goals are achieved. Advocates of a carbon tax have created an organization to promote the idea.[15] A carbon tax may be best pursued nationally or even internationally, but there has been some discussion of state and local governments embracing the idea. In November, 2006, for example, residents of Boulder, Colorado voted to approve what is apparently the nation's first carbon tax, based on the number of kilowatt-hours of electricity consumers use; the tax is estimated to add about $16/year to the average homeowner's bill and $46/year for businesses. Revenues, which are expected to reach $6.7 million by 2012, will be used to fund the city's climate action plan that includes energy efficiency, renewable sources, and reduced vehicle miles traveled.[16]

---

[12] Includes options CC-17, 18, 19, and 20.

[13] http://www.epa.gov/airmarkets/cap-trade/index.html

[14] The Protocol requires that the EU as a whole reduce its GHG emissions from 1990 levels by 8 percent during the 2008-12 compliance period. The first phase of the program operates from 2005 through 2007. The core of the system is national allocation plans (NAPs), plans that set out each Member State's allocation of CO_2 emission allowances. NAPs set both the total of emission allocations available in each member state and the allocation made to each installation covered by the scheme; see http://ec.europa.eu/environment/climat/emission.htm.

[15] See http://www.carbontax.org/

[16] Katie Kelley, "City Approves 'Carbon Tax' In Effort to Reduce Gas Emissions," *The New York Times* (November 18, 2006). +

GHG Offset/mitigation requirements for new power plants. A carbon offset requires a source to offset its carbon emissions by avoiding an equivalent amount of emissions elsewhere (either CO_2 or other GHGs) or by sequestering an equivalent amount of carbon. Companies that seek to be carbon neutral, for example, may be unable to completely eliminate emissions and choose to purchase offsets equal to whatever emissions they are unable to eliminate.[17] Under a 1997 law, Oregon requires new power plants to offset some of their CO_2 emissions; plants can meet that goal by making payments to the Climate Trust, a Portland NGO, which invests in greenhouse gas projects that avoid, displace, or sequester CO_2 emissions. Plants are required to ensure their net emissions remain 17 percent below the most efficient base-load gas plant operating in the US.[18]

Assessment: **High Priority. Bin:**

A cap and trade program and a carbon tax are not mutually exclusive and both could be implemented as part of an effort to reduce GHG emissions and achieve a particular target. They are discussed together here because policy discussions often address them at the same time. There are several issues to be explored, such as whether sources should be required to report GHG emissions or whether that should be voluntary, and whether sources should be required to obtain independent verification of emissions. The bigger the universe of sources, the more effective trading will be.

Are carbon taxes and cap and trade mutually exclusive options in terms of political feasibility? Should we recommend a study group be convened to develop a target? We should recommend we move a step at a time. We should set a date as well for completion of the target setting effort. We recommend these options, with an implementation phase. Our task by July is to lay out general recommendations; specific proposals will come later. We need to study more the idea of a carbon tax, a regional cap and trade program, or hybrid. There are different policy tools for reducing emissions (regional/state cap and trade, carbon tax, etc.). We recommend the state continue to work with other states on cap and trade. A carbon tax can be effective; so can a cap and trade program. This not a case of "either one or the other."

As a result of the Supreme Court's decision in April, will CO_2 be designated as a criteria pollutant? Will the EPA regulate vehicles? Some states are apparently pushing for that issue. Will a federal policy preempt state regulation? Do states favor that so they can develop their own SIPs? Should we include a discussion of current federal proposals, so governor would have that information? (see CC-8) Does the state want to support any national efforts? We need a paper summarizing this.

The transportation/land use group is also looking at this issue, and the energy efficiency/SWEEP report will address it as well.

There is not enough going on in Utah to justify a separate GHG offset program for power plants. The integrated resource planning process in Utah takes this into account. Pacifcorp does this offsetting in Oregon.

[Note: do we want to recommend anything more than these issues be studied and/or a report written?]

---

[17] Cliamte Biz, http://www.climatebiz.com/sections/backgrounder_detail.cfm?UseKeyword=Carbon%20Offsets

[18] Oregon Carbon Dioxide Emission Standards For New Energy Facilities, http://www.oregon.gov/ENERGY/SITING/docs/ccnewst.pdf.

CC-7 - Guidelines for Climate Policy (in general); Coordination with other Policies

Assessment: **High Priority. Bin:**

Climate policies should be coordinated with other policies, including air pollution and water policy.[19] We are already addressing this in Utah.

Montana is considering requiring GHG assessments as part of state-mandated environmental impact statements.

It is important to examine how climate policies affect other environmental policies and to ensure as much coordination and harmony as possible. There are examples of the need for coordination, such as the UK moving to diesels to reduce carbon emissions but increasing particulate pollution.

We should ensure that climate policies don't exacerbate other problems such as hazardous wastes. The less water used, the less energy used in moving and storing it, but climate benefits and impacts are modest.

[19] Includes options CC-11, 12, 13, and 14.

CC-8 - Evaluate Existing Climate Proposals at the Regional and Federal Levels

Assessment: High Priority. Bin:

Prepare a memo on federal and regional climate change bills and proposals, outlining the potential impact each would have on Utah businesses and residents.

[Suggestion from Kathy: In planning, implementing, and updating Utah's energy policies & options, it is desirable to monitor other states, regional, federal and international activities, so we can adopt new ideas that suit Utah's needs, as other entities create them.]